Vitamin D3 action on the newborn's immune system and zinc as an immunomodulator

Maria Bertha Romo Almanza
NICU Hospital Materno Infantil Guadalupe Victoria, Mexico.

Abstract

In recent years there has been an increase in the survival of critically ill newborns thanks to advances in the area of Neonatology, bringing with it the development of multiple pathologies, with the consequent increase in the risk of presenting perinatal infections, especially in the group corresponding to prematurity, the incidence and severity of infections in the newborn being well documented, which is largely due to immaturity in both the cellular and humoral response. Reporting a limited functional capacity of all components, in addition to observing quantitative and qualitative deficiencies of the cellular components of the immune system, so it is important to develop safe strategies such as supplementation with nutrients, which allow improving the immune response in the body, of these children.

Two decades ago, it was documented that Vitamin D3 in addition to having a regulatory function in the homeostasis of calcium and phosphorus has a relevant role in the modulation of the immune response, Its action is exerted through the union with its nuclear receptor and intervenes activating transcription factors The Receptor is present in cells of different tissues and of the immune system, such as dendritic cells, macrophages and T lymphocytes.

It is known that: the immune system can be divided into two defense mechanisms or responses: the innate response and the acquired one. The innate response is made up of cellular and humoral components and does not improve after exposure to a specific antigen.

About the Zinc (Zn) like trace element it can to participate in the modulation of the inflammatory response, it has linked very closely to the immune system, favoring the Th1 citokines production, development B lynphocytes and it can to influnece the antibodies production, especially IgG

Then in this time we go to review the recomendation in the literature, and how these elements can positively influence the immune response.

CONCLUSIONS:

Within the comprehensive management that must be taken in the critically ill newborn, especially in the premature patient, we must consider micronutrients and their ability to influence the immune response, which is why the use of immunomodulators such as vitamin D (400 international units) is important. per day as a prophylactic and up to 1000 international units per day in deficiency) and with respect to Zinc, at appropriate doses Preterm: 300 micrograms of elemental zinc per kilo per day added to parenteral nutrition, and in newborns of term 100 mcgkg and the same in nutrition pareneral, further research on these micronutrients is required.

Biography:

Dr. Maria Bertha Romo Almanza, completed her postgraduate degree in Neonatology at the National Institute of Perinatology, in Mexico City, completing this specialty at 30 years edge (2009), previously she has a specialty in Pediatrics at the Children's Hospital in Saltillo Coahuila, currently she is Chief in charge in Neonatology Inensive Care Unit at the Guadalupe Victoria Maternity and Child Hospital of Atizapan de Zaragoza since 5 years ago . Previously she was Chief in charge in NICU at Star Médica Luna Parc Cuautitlan Izcalli , where he continues his private practice. Instructor Neonatal CPR , member from ANEM , APROLAM She has published articles in international Journals .

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